Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-8. (canceled)

9. (currently amended) A retrieval device for retrieving data from a mass storage medium including a matching circuit for continuously comparing a determined key representative of the data sought to be retrieved with a data signal representative of a continuous stream of data read from said mass storage medium, said determined key being an analog signal and the data signal also being an analog signal.

10. (original) The retrieval device of claim 9 further comprising a memory connected to said retrieval device for storing said retrieved data for access by another processor.

11. (original) The retrieval device of claim 9 wherein said retrieval device is directly coupled to said mass storage medium and interfacing said mass storage medium with a processor desiring said retrieved data for processing thereof.

12. (currently amended) A retrieval device for retrieving data from a mass storage medium, said retrieval device being directly coupled to said mass storage medium and interfacing said mass storage medium with a processor desiring said retrieved data for processing thereof, said retrieval device comprising a matching circuit for making a continuous pattern comparison between a determined key representative of the data sought to be retrieved with a data signal representative of a continuous stream of data read from said mass storage medium.

13. (original) The retrieval device of claim 12 further comprising a memory connected to said retrieval device for storing said retrieved data for access by said processor.

14. (original) The retrieval device of claim 12 wherein said matching circuit is configured to match a digital key with a digital data signal.

15. (original) The retrieval device of claim 14 further comprising a plurality of mass storage media coupled to said matching circuit.

16. (original) The retrieval device of claim 12 wherein said matching circuit is configured to match an analog signal key with an analog data signal.

17. (original) The retrieval device of claim 16 further comprising a plurality of mass storage media coupled to said matching circuit.

18. (currently amended) A retrieval device for retrieving data from a mass storage medium, said retrieval device being directly coupled to said mass storage medium and interfacing said mass storage medium with a computer network desiring said retrieved data for processing thereof, said retrieval device comprising an approximate matching circuit for making a continuous pattern comparison between a determined key representative of the data sought to be retrieved with a data signal representative of a continuous stream of data read from said mass storage medium.

19. (original) The device of claim 18 further comprising a memory connected to said retrieval device for storing said retrieved data for access by said computer network.

20-32. (canceled)

33. (original) The retrieval device of claim 9 further comprising a memory connected to said retrieval device for storing a digital representation of said retrieved data for access by another processor.

34. (previously presented) A retrieval device for retrieving data from a mass storage medium including a matching circuit for framelessly comparing and correlating a determined key representative of the data sought to be retrieved with a data signal representative of a continuous stream of data read from said mass storage medium, said determined key being a digital representation of the data itself and the data signal also being digital.

35. (original) The retrieval device of claim 34 further comprising a memory connected to said retrieval device for storing said retrieved data for access by another processor.

36. (original) The retrieval device of claim 34 wherein said retrieval device is directly coupled to said mass storage medium and interfacing said mass storage medium with a processor desiring said retrieved data for processing thereof.

37-39. (canceled)

40. (original) The retrieval device of claim 12 wherein said matching circuit is configured to approximately match a digital key with a digital data signal.

41. (original) The retrieval device of claim 12 wherein said matching circuit is configured to approximately match an analog signal key with an analog data signal.

42-52. (canceled)

53. (currently amended) A data retrieval system comprising:

a mass storage medium in which data is stored; and

a retrieval device in communication with the mass storage medium, wherein the retrieval device is configured to (1) receive a continuous stream of data from the mass storage medium, and (2) continuously process the data stream to determine whether an approximate match exists therein with respect to a key that is representative of data sought to be retrieved.

54. (previously presented) The system of claim 53 further comprising a system bus in communication with the retrieval device, wherein the system bus is configured to provide a search request to the retrieval device, and wherein the retrieval device is further configured to process the search request to determine the key.

55. (previously presented) The system of claim 54 further comprising a processor in communication with the system bus, wherein the processor is configured to place a search request on the system bus for receipt by the retrieval device.

56. (previously presented) The system of claim 54 further comprising a remote computer system in communication with the system bus via a communications network and network interface, wherein the remote computer system is configured to communicate a search request to the system bus for placement thereon and receipt by the retrieval device.

57. (previously presented) The system of claim 56 further comprising a processor in communication with the system bus, wherein the processor is configured to place a search request on the system bus for receipt by the retrieval device.

58. (previously presented) The system of claim 53 wherein the retrieval device is further configured to process the data stream to determine whether an approximate match exists via a pattern comparison between the key and the data stream.

59. (previously presented) The system of claim 58 wherein the retrieval device is further configured to perform the pattern comparison via frameless matching.

60. (previously presented) The system of claim 58 wherein the key is an analog key and wherein the data stream is an analog data stream.

61. (previously presented) The system of claim 60 wherein the retrieval device is further configured to perform the pattern comparison by calculating a correlation coefficient that is indicative of a degree of correlation between the key and the data stream.

62. (previously presented) The system of claim 61 wherein the retrieval device is further configured to determine that an approximate match exists if the correlation coefficient has a value larger than or at least equal to a predetermined threshold value.

63. (previously presented) The system of claim 62 wherein the threshold value is user-specified.

64. (previously presented) The system of claim 58 wherein the key is a digital key and wherein the data stream is a digital data stream.

65. (previously presented) The system of claim 53 wherein the key in an analog key and wherein the data stream is an analog data stream.

66. (previously presented) The system of claim 65 wherein the retrieval device is further configured to determine whether an approximate match exists between the determined key and the data stream by calculating a correlation coefficient that is indicative of a degree of correlation between the key and the data stream.

67. (previously presented) The system of claim 53 wherein the key is a digital key and wherein the data stream is a digital data stream.

68. (previously presented) The system of claim 53 wherein the retrieval device is further configured to determine whether an approximate match exists between the key and the data stream via frameless matching.

69. (previously presented) The system of claim 53 wherein the search request is representative of a user-specified query.

70. (previously presented) The system of claim 53 wherein the retrieval device is further configured to determine a starting location in the mass storage medium that represents the location at which the data stream is to begin.

71. (previously presented) The system of claim 70 wherein the retrieval device is further configured to determine an ending location in the mass storage medium that represents the location at which the data stream is to terminate.

72. (previously presented) The system of claim 53 wherein the retrieval device comprises programmable logic for determining whether an approximate match exists between the key and the data stream.

73. (previously presented) The system of claim 53 wherein the retrieval device comprises programmable logic for determining whether an approximate match exists via a pattern comparison between the key and the data stream.

74. (previously presented) The system of claim 53 wherein the mass storage medium comprises a database of DNA sequences.

75. (previously presented) The system of claim 53 wherein the mass storage medium comprises a database of audio recordings.

76. (previously presented) The system of claim 53 wherein the mass storage medium comprises an image database.

77. (currently amended) A data retrieval system comprising:

a mass storage medium in which data is stored; and

a retrieval device in communication with the mass storage medium, wherein the retrieval device is configured to (1) receive a continuous stream of data from the mass storage medium, and (2) continuously process the data stream to determine whether a pattern match exists therein with respect to a key that is representative of data sought to be retrieved.

78. (previously presented) The system of claim 77 further comprising a system bus in communication with the retrieval device, wherein the system bus is configured to provide a search request to the retrieval device, and wherein the retrieval device is further configured to process the search request to determine the key.

79. (previously presented) The system of claim 77 wherein the key is an analog key and wherein the data stream is an analog data stream.

80. (previously presented) The system of claim 77 wherein the key is a digital key and wherein the data stream is a digital data stream.

81. (previously presented) The system of claim 77 wherein the retrieval device comprises a programmable logic device configured to process the data stream to determine whether a pattern match exists therein with respect to a key that is representative of data sought to be retrieved.

82. (previously presented) The retrieval device of claim 9 wherein said retrieval device performs the comparison via frameless matching.

83. (previously presented) The retrieval device of claim 12 wherein said retrieval device performs the comparison via frameless matching.

84. (previously presented) The device of claim 18 wherein said retrieval device performs the comparison via frameless matching.

85. (previously presented) The system of claim 53 wherein said retrieval device performs the comparison via frameless matching.

86. (previously presented) The system of claim 77 wherein said retrieval device performs the comparison via frameless matching.

87. (new) A data retrieval system comprising:

a mass storage medium in which data is stored; and

a retrieval device in communication with the mass storage medium, wherein the retrieval device is configured to (1) receive a continuous stream of data from the mass storage, and (2) process the data stream to determine whether an approximate match exists via a pattern comparison between the key and the data stream, wherein the retrieval device is further configured to perform the pattern comparison by calculating a correlation coefficient that is indicative of a degree of correlation between the key and the data stream, and wherein the retrieval device is further configured to determine that an approximate match exists if the correlation coefficient has a value larger than or at least equal to a predetermined threshold value.

88. (new) The system of claim 87 wherein the threshold value is user-specified.

89. (new) The system of claim 87 wherein the key is an analog key and wherein the data stream is an analog data stream.

90. (new) The system of claim 87 wherein the key is a digital key and wherein the data stream is a digital data stream.

91. (new) A retrieval device for retrieving data from a mass storage medium, said retrieval device comprising an approximate matching unit that is configured to framelessly perform a pattern comparison between a determined key representative of the data sought to be retrieved and a data signal representative of a continuous stream of data read from said mass storage medium.

92. (new) The retrieval device of claim 91 wherein said approximate matching unit is further configured to perform said pattern comparison by computing a correlation coefficient between said data key and said data signal, and wherein said approximate matching unit is further configured to compare said computed correlation coefficient with a predetermined threshold value to thereby determine whether an approximate match exists between said data key and said data signal.

93. (new) The retrieval device of claims 92 wherein said predetermined threshold value is adjustable to control whether said approximate matching unit performs an approximate match operation or an exact match operation, and further to control, for an approximate match operation, a degree of approximate matches returned by said approximate match operation.

94. (new) The retrieval device of claim 92 wherein said approximate matching unit comprises digital logic that is configured to framelessly perform said pattern comparison, wherein said data key is a digital data key and wherein said data signal is a digital data signal.

95. (new) The retrieval device of claim 94 further comprising an approximate matching and pre-fetch processor, said approximate matching and pre-fetch processor comprising said approximate matching unit, wherein said approximate matching and pre-fetch processor is

configured to generate said digital data signal by sampling a continuous stream of analog data read from said mass storage medium at a high rate.

96. (new) The retrieval device of claim 95 wherein said approximate matching and pre-fetch processor is configured to generate said digital data key by sampling an analog key at a high rate.

97. (new) The retrieval device of claim 95 wherein said predetermined threshold value is adjustable to control whether said approximate matching unit performs an approximate match operation or an exact match operation, and further to control, for an approximate match operation, a degree of approximate matches returned by said approximate match operation.

98. (new) The retrieval device of claim 95 wherein said approximate matching unit is implemented on a programmable logic device.

99. (new) The retrieval device of claim 95 wherein said predetermined threshold value is adjustable to control whether said approximate matching unit performs an approximate match operation or an exact match operation, and further to control, for an approximate match operation, a degree of approximate matches returned by said approximate match operation.

100. (new) The retrieval device of claim 94 further comprising a data path extending from said mass storage medium to a system bus, said data path comprising a digital decoder and said approximate matching unit, said digital decoder having an input and an output, said input being configured to receive a continuous stream of analog data that corresponds to data read from said mass storage medium, said output being in communication with said approximate matching unit.

101. (new) The retrieval device of claim 100 further comprising a plurality of said paths connected in parallel between said mass storage medium and said system bus.

102. (new) The retrieval device of claim 94 further comprising a data path extending from said mass storage medium to a system bus, said data path comprising a digital decoder, error correction circuitry, and said approximate matching unit, said digital decoder having an input and an output, said error correction circuitry having an input and an output, said digital decoder input being configured to receive a continuous stream of analog data that corresponds to data read from said mass storage medium, said digital decoder output being in communication with said error correction circuitry input, said error correction circuit output being in communication with said approximate matching unit.

103. (new) The retrieval device of claim 102 further comprising a plurality of said paths connected in parallel between said mass storage medium and said system bus.

104. (new) The retrieval device of claim 94 wherein said approximate matching unit is directly coupled to said mass storage medium and interfaces said mass storage medium with a processor desiring said retrieved data for processing thereof.

105. (new) The retrieval device of claim 94 wherein said approximate matching unit is implemented on a programmable logic device.

106. (new) The retrieval device of claim 92 wherein said approximate matching unit comprises analog circuitry that is configured to framelessly perform said pattern comparison, wherein said data key is an analog data key and wherein said data signal is an analog data signal.

107. (new) The retrieval device of claim 106 further comprising an approximate matching and pre-fetch processor, said approximate matching and pre-fetch processor comprising said approximate matching unit, wherein said approximate matching and pre-fetch processor is configured to generate said analog data key from a digital data key.

108. (new) The retrieval device of claim 106 wherein said predetermined threshold value is adjustable to control whether said approximate matching unit performs an approximate match operation or an exact match operation, and further to control, for an approximate match operation, a degree of approximate matches returned by said approximate match operation.

109. (new) The retrieval device of claim 106 wherein said approximate matching unit is directly coupled to said mass storage medium and interfaces said mass storage medium with a processor desiring said retrieved data for processing thereof.

110. (new) The retrieval device of claim 92 wherein said approximate matching unit is implemented on a programmable logic device.

111. (new) The retrieval device of claim 92 wherein said approximate matching unit is directly coupled to said mass storage medium and interfaces said mass storage medium with a processor desiring said retrieved data for processing thereof.

112. (new) A method for retrieving data from a mass storage medium, said method comprising the steps of:

receiving a search command from a processor for said mass storage medium,

determining a key representative of the data desired to be retrieved from said mass storage medium,

making a pattern comparison between said key with a data signal representative of a continuous stream of data read from said mass storage medium, said determined key being an analog key or a digital representation of an analog key, said data signal being an analog data signal or a digital representation of an analog signal, wherein said data signal is said analog data signal if said key is an analog key, and wherein said data signal is said digital representation of said analog signal if said key is said digital representation of said analog key, and

determining, in response to said pattern comparison, which data within said data signal matches said key.

113. (new) The method of claim 112 wherein said pattern comparison making step comprises computing a correlation coefficient between said key and said data signal, and wherein said match determining step comprises comparing said computed correlation coefficient with a predetermined threshold value to thereby determine whether a match exists between said data key and said data signal.

114. (new) The method of claim 113 further comprising adjusting said predetermined threshold value to control whether said match determining step corresponds to an exact match operation or an approximate match operation.

115. (new) The method of claim 113 wherein said key comprises said analog key and wherein said data signal comprises said analog data signal, and wherein said pattern comparison making step further comprises performing said pattern comparison making step with analog circuitry.

116. (new) The method of claim 115 wherein the key determining step comprises generating said analog key from a digital key that is representative of the data desired to be retrieved from said mass storage medium.

117. (new) The method of claim 113 further comprising reading data from said mass storage medium as a continuous analog data stream and sampling said continuous analog data stream at a high rate to thereby generate said digital representation of said analog data signal, and wherein said key determining step comprises sampling an analog key that is representative of the data desired to be retrieved from said mass storage medium at a high rate to thereby generate said digital representation of said analog key, and wherein said pattern comparison making step further comprises performing said pattern comparison making step with digital logic.

118. (new) The method of claim 113 wherein said search command receiving step comprises receiving said search command from a remote processor over a network interface.